ABSTRACT OF THE DISCLOSURE

Method of ultrasound intrusion detection is disclosed wherein the ultrasound surveillance in volumetric multi-area room is being organized to meet the requirements to faultlessness in providing for the preventive defense-in-depth intrusion protection of critical objects. All the room around a protected object is being purposely arranged in juxtaposed volumetric substantial areas, which areas are closed or open and do represent respectively the central, short-range and long-range echelons of an entire defense-in-depth protection structure. The pertain method of ultrasound detection of either ingress or egress hazardous intrusion is being realized in each echelon regarding the specific task, which this very echelon has been commissioned with. These methods are being based upon the phenomena of reflection, refraction by edge diffraction and interference by shadowing of narrowly directed ultrasound beams. The said beams are being closely disposed in 2-D curvilinear or polygonal array, or in 3-D curved surface lattice onto multi-level solid openwork frames arranged in different echelons of a protected object. These ultrasound beams are being activated for target detection with use of unit stationary vector directing, stationary vector lattice arranging or unit/group vector scanning techniques. Processing of caution, self-checking, intrusion vindication, and alarm signals is being accomplished on the basis of logical programming of control software algorithm for presentation of alarm and security activating signals, and with the same kind of hardware and software for each of the said ultrasound beams' response phenomena involved. Having been put in practice the present invention shall enhance the remote ability, trustworthiness and cost-effectiveness of the ultrasound detection of ingress or egress intrusion throughout the areas of protected critical objects.

9 Claims, 2 Drawing Sheets

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